Patent claims

1.-26. (cancelled)

27. (new) A turbomachine, comprising:

a rotor;

a stator;

a flow duct for guiding an action fluid, the action fluid provided for driving the rotor; and

a magnet for generating a predetermined magnetic field in the flow duct.

28. (new) The turbomachine as claimed in claim 27, wherein the magnet is arranged on the stator.

29. (new) The turbomachine as claimed in claim 27, wherein the magnetic field is oriented radially relative to a rotation axis of the rotor.

30. (new) The turbomachine as claimed in claim 29, wherein the magnetic field changes its orientation by 180° at least one time along the rotation axis.

31. (new) The turbomachine as claimed in claim 27, further comprising:

a magnetic vane region extending along the rotation axis, the magnetic guide blade region having a uniform orientation of the magnetic field; and

a magnetic blade region extending along the rotation axis, the magnetic blade region having a uniform orientation of the magnetic field, wherein the magnetic field in the blade region is contrarily oriented relative to magnetic field in the vane region.

32. (new) The turbomachine as claimed in claim 31, wherein the magnetic blade region is arranged downstream of the magnetic vane region relative to a flow direction of the action fluid.

33. (new) The turbomachine as claimed in claim 31, wherein a number of magnetic vane regions and blade regions are arranged alternately along the rotation axis.

34. (new) The turbomachine as claimed in claim 31, wherein the stator comprises a first circumferential ring for limiting the magnetic field in the magnetic vane region, the first circumferential ring extending radially inwards relative to the rotation axis.

35. (new) The turbomachine as claimed in claim 31, wherein the rotor comprises a first projection projecting radially inwards relative to the rotation axis for limiting the magnetic field in the magnetic vane region, the first projection included in the magnetic vane region.

36. (new) The turbomachine as claimed in claim 35, comprising a plurality of radially inwards extending first projections arranged across the entire circumference of the stator.

37. (new) The turbomachine as claimed in claim 31, wherein the rotor comprises a second circumferential ring for limiting the magnetic field in the magnetic blade region, the second circumferential ring extending radially outwards relative to the rotation axis.

38. (new) The turbomachine as claimed in claim 31, wherein the rotor comprises a second projection projecting radially outwards relative to the rotation axis for limiting the magnetic field in the magnetic blade region, the second projection included in the magnetic blade region.

39. (new) The turbomachine as claimed in claim 39, comprising a plurality of radially outwards extending second projections arranged across the entire circumference of the rotor.

40. (new) The turbomachine as claimed in claim 27, further comprising an ionization device for generating charged particles included in the action fluid.

41. (new) The turbomachine as claimed in claim 27, further comprising a recombination device for the recombining charged particles included in the action fluid.

42. (new) A method of operating a turbomachine having a rotor, a stator and a flow duct for guiding an action fluid, the action fluid including ions, the method comprising:

generating a magnetic field;

directing the magnetic field through the flow duct;

passing the action fluid through the flow duct; and

deflecting the ions by the magnetic field.

43. (new) The method as claimed in claim 42, wherein the rotor is rotatably actuated by the deflected ions.

44. (new) The method as claimed in claim 42, wherein the magnetic field is oriented radially relative to a rotation axis of the rotor, and a tangential velocity component of the action fluid is exclusively affected by the magnetic field.

45. (new) The method as claimed in claim 42, wherein the magnetic field is oriented radially relative to a rotation axis of the rotor, and an orientation of the magnetic field alternates along a flow direction of the action fluid.

46. (new) The method as claimed in one of claims 42, wherein the magnetic field is controlled regarding its shape or behavior over time.

47. (new) The method as claimed in claim 42, wherein the ions included in the action fluid are generated by ionization of the action fluid before the action fluid enters the flow duct.

48. (new) The method as claimed in claim 42, wherein the ions are generated by ionizing fluid particles included in the action fluid while the action fluid flows through the flow duct.

49. (new) The method as claimed in claim 42, wherein the irons are generated using a collision ionization mechanism.

50. (new) The method as claimed in claims 42, wherein the irons are generated using a radiation ionization mechanism.

51. (new) The method as claimed in one of claims 42, wherein the action fluid is purified using a recombination process or a catalytic process for extracting harmful substances from the action fluid.

52. (new) The method as claimed in claim 51, wherein the action fluid is purified before the action fluid enters the flow duct.

53. (new) The method as claimed in claim 51, wherein the action fluid is purified after the action fluid exits the flow duct.